

REMARKS

Further and favorable reconsideration of the subject application in light of the following remarks, pursuant to and consistent with 37 C.F.R. § 1.116, are respectfully requested.

There is only one rejection remaining the in the application. Claims 1-13 have been rejected under 35 U.S.C. § 103 as allegedly obvious in view of U.S. Patent No. 5,443,911 (“Schreiber ‘911”) and U.S. Patent No. 5,021,484 (“Schreiber ‘484”) and U.S. Patent No. 3,357,791 (“Napier”). With respect, it appears that the Office has not given sufficient consideration to differences between the teachings of the cited references and the present invention that show that the present invention could not have been regarded as obvious at the time it was made.

Schreiber '911 and Schreiber '484 describe a mixture of a thermally curable compound containing 1-oxa-3-aza tetraline and a curable brominated epoxy resin, wherein the curable brominated epoxy resin may be glycidyl ethers of brominated phenols or brominated novolaks, and therefore they describe a phenol resin composition comprising a phenol resin and other curable compound with fillers and reinforcement fibers to tailor the properties of the resin, such as flame retardancy and heat durability.

Napier describes adding fibrous boehmite to “elastomer products” or “rubber-like polymeric materials” in order to improve strength and/or abrasion resistance. Napier uses the term plastics to describe materials other than rubber in which fibrous boehmite may be used “manners analogous” to rubber. In this connection, the Office has asserted that Napier would have been aware of phenol-formaldehyde (or epoxy) resins as encompassed by the term “plastics.” The Office has contended that the use of “plastic” by Napier would have encompassed, for example, Bakelite. However, the scope of the “plastics” referred to by

Napier can only be understood in terms of the kinds of elastomeric materials in which fibrous boehmite can be used analogous to rubber. While Napier refers specifically to a variety of plastic films, coatings, paints and adhesives, Napier does not refer to Bakelite or the like. It is only by hindsight recognition of the advantages of the present invention that one might be tempted to read the teachings of Napier more broadly than the plain teachings relating to the improvements of elastomeric plastics analogous to rubber.

Applicants respectfully submit that Napier can only be read as extending to plastics having rubber-like properties for which the use of fibrous boehmite would provide analogous benefits to the benefits Napier has disclosed for rubber. It must be recognized that Napier only describes adding boehmite to elastomer products or rubber-like polymeric materials. Furthermore, it must be recognized that the properties to be improved by the invention described in Napier are properties that elastomer products or rubber-like polymeric materials lack, i.e. strength and/or abrasion resistance. These are not properties which would have been considered to be "ripe for improvement" in Bakelite. Thus, a person of ordinary skill would not have read Napier as suggesting adding boehmite to other unspecified plastics.

It was and is well-known in the art that plastics encompass a variety of materials having a wide range of properties. Phenol resins and phenol resin compositions are not elastomer products nor rubber-like polymeric materials. Phenol resins and phenol resin compositions have different properties from those of elastomer products and rubber-like polymeric materials. More specifically, the phenol resin and phenol composition are not elastomeric while elastomer products or rubber-like polymeric material are elastomeric. Consequently, it would be widely understood that additives that add strength and abrasion resistance to elastomeric plastics would not necessarily improve any properties of non-elastomeric products.

Indeed, the problem solved by the present invention is not directed to increasing strength and abrasion resistance of an elastomeric plastic. In contrast to the above, the present invention can achieve excellent effects to improve thermal conductivity, and mechanical strength in a phenol resin, along with kneading workability and moldability, as explained in the present specification, "EFFECT OF THE INVENTION" on page 3, line 33 to page 4, line 19 and Examples 1 to 14 along with Tables 1 to 3.

Schreiber '911 and Schreiber '484 do not describe adding boehmite to a resin composition nor adding an additive or a combination of additives to resin compounds in order to improve thermal conductivity, and mechanical strength, along with kneading workability and moldability. However, Napier does not describe adding boehmite to a phenol resin and phenol resin composition nor adding an additive or a combination of additives to resin compounds in order to improve thermal conductivity, and mechanical strength, along with kneading workability and moldability.

The cited references do not teach or suggest a combination of "a phenol resin" and "acicular or cylindrical boehmite having an average particle diameter (minor diameter) of 100 nm or less and one or more inorganic compounds other than the boehmite as fillers nor a combination of "a phenol resin and acicular or cylindrical boehmite having an average particle diameter (minor diameter) of 100 nm or less and an alumina-based compound other than the boehmite as a filler" (the common constitutional components of the present inventions), nor improvement of thermal conductivity, and mechanical strength, along with kneading workability and moldability (the problems to be solved by the present inventions)

In addition, there could be no reason for a person of ordinary skill to combine the technical features of Schreiber '911 and Schreiber '484 and those of Napier, because there are no common technical features of the resin compositions described in Schreiber '911 and

Schreiber '484 and those described in Napier. Accordingly, there are no common problems to be solved by the inventions described in Schreiber '911 and Schreiber '484 and those described in Napier. Because the problems solved by Napier's teachings with respect to rubber and analogous elastomeric plastics have no relation to problems in the products of Schreiber, there is no reason to combine the references.

There is simply no reason for one of ordinary skill in the art to have combined the teaching of the cited references as the Office has proposed apart from a reading influenced by hindsight recognition of the improvements disclosed by the present inventors. Therefore, the present invention comprising a combination of "a phenol resin" and "acicular or cylindrical boehmite having an average particle diameter (minor diameter) of 100 nm or less and one or more inorganic compounds other than the boehmite as fillers" or a combination of "a phenol resin" and "acicular or cylindrical boehmite having an average particle diameter (minor diameter) of 100 nm or less and an alumina-based compound other than the boehmite as a filler" would not have been obvious to a person having ordinary skill in the art to which the subject matter of the present inventions pertains.

Withdrawal of the rejection is appropriate and respectfully requested.

Conclusion

Reconsideration of the rejection and issuance of a Notice of Allowance are believed to be next in order. In the event that there are any questions relating to this Amendment and Reply, or the application in general, it would be appreciated if the Examiner would telephone the undersigned attorney concerning such questions so that prosecution of this application may be expedited.

The Director is hereby authorized to charge any appropriate fees that may be required by this paper, and to credit any overpayment, to Deposit Account No. 02-4800.

Respectfully submitted,

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